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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/811,898	03/19/2001	Takanobu Yoshino	09792909-4811	7628

26263 7590 04/28/2004

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EXAMINER

YUAN, DAH WEI D

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 04/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

AS

**Office Action Summary****Application No.**

09/811,898

**Applicant(s)**

YOSHINO ET AL.

**Examiner**

Dah-Wei D. Yuan

**Art Unit**

1745

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 March 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-16 is/are allowed.
- 6) ☒ Claim(s) 4 and 17-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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**METHOD OF MANUFACTURING A BATTERY INCLUDING POSITIVE  
ELECTRODE, A NEGATIVE ELECTRODE AND AN ELECTROLYTE LAYER**

Examiner: Yuan

S.N. 09/811,898

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April 19, 2004

**Detailed Action**

1. The Applicant's amendment filed on March 22, 2004 was received. Claim 3 was cancelled. Claim 18 was amended.
2. The text of those sections of Title 35, U.S.C. code not included in this action can be found in the prior Office Action issued on December 16, 2003.

***Claim Rejections - 35 USC § 102***

3. The claim rejections under 35 U.S.C. 102(b) as anticipated by Miyazaki et al. on claims 17-20 are withdrawn, because the independent claim 18 has been amended.

***Claim Rejections - 35 USC § 103***

4. The claim rejections under 35 U.S.C. 103(a) as unpatentable over Miyazaki et al. and Kaido et al. on claims 17-20 are withdrawn, because the independent claim 18 has been amended.
5. Claims 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al. (US 6,162,264) in view of Sasayama et al. (US 6,461,757 B1).

With respect to claims 17-19, Miyazaki et al. teach a method of manufacturing a battery comprising a positive electrode (37,  $\text{LiCoO}_2$ ), a negative electrode (38, a carbonaceous material) and a separator (39, electrolyte layer) arranged between the positive electrode and the negative electrode. Miyazaki et al. disclose steps of (1) applying an electrode forming composition comprising active material and a binder on a collector, (b) impregnating the active material layer with liquid material, (c) solidifying the liquid material to form a solidified material, and (d) peeling a portion of the active material so the electrode active material is formed intermittently on the collector (see Figures 19 and 23). Furthermore, Figure 8 shows an electrode plate in which terminals (7) are attached to the non-coated portions in the current collector (1). The contact region between the terminal and the electrode plate is excluded of any electrolyte layer (see Figure 22). Moreover, an electrode mixture layer is not formed on the exposed region between the attaching of the terminal and the forming of the electrode mixture layer (see Figure 8).

However, Miyazaki et al. do not teach disposing a protection tape to cover a part of the terminal afterwards. Sasayama et al. teach the application of an electrically insulating material segment (7) to cover part of the terminal (9) in order to provide electrical insulation in the battery. See Figure 4; Column 5, Lines 5, Lines 5-24; Column 32, Lines 20-62. Therefore, it would have been obvious to one of ordinary skill in the art to dispose a protection tape on part of the terminal of Miyazaki et al., because Sasayama et al. teach the use of such material to insulate the terminal in the battery.

With respect to claim 20, Miyazaki et al. further disclose the steps of filling the separator (39) with non-aqueous electrolyte on regions where the electrode active material is formed. The existence of the electrode active material and a coating layer is unfavorable for a certain portion of the electrode plate, for example, for a portion to which a terminal is connected for introducing an electric current, and for a portion along which the electrode plate is subjected to a cutting work, i.e., electrode plate is cut between the intermittently formed electrode active material. See Column 1, Lines 35-54; Column 2, Lines 35-50; Column 4, Lines 4-19.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyazaki et al. (US 6,162,264) and Sasayama et al. (US 6,461,757 B1) as applied to claims 17-20 above, and further in view of Kaido et al. (US 6,314,638).

Miyazaki et al. and Sasayama et al. teach a method of manufacturing a battery as described in Paragraph 5 above. However, Miyazaki et al. and Sasayama et al. do not teach the active electrode materials are formed on both sides of the current collector in the battery assembly. Kaido et al. teach a method to form active electrode material intermittently over the surface of the current collector as shown in Figure 8. Moreover, the electrode material is coated sequentially or simultaneously to front and back surfaces of the current collector so that uncoated areas at predetermined intervals in the longitudinal direction are obtained. See Column 34, Line 66 to Column 35, Line 5. Therefore, it would have been obvious to one of ordinary skill in the art to coat both surfaces of the electrode collector with active electrode material on the battery of Miyazaki et al. and Sasayama et al., because Kaido et al. teach the active electrode material can

be coated on both faces of the current collector sequentially in order to improve the efficiency and performance of the resulting electrochemical cell.

***Allowable Subject Matter***

7. Claims 5-16 are allowed. The invention of independent claim 5 recites a method of manufacturing a battery comprising the steps of (a) intermittently forming an electrode mixture layer, (b) attaching a terminal to an electrode collector exposed region, (c) forming the electrolyte layer on at least a region where the electrode mixture layer is formed, (d) forming the electrolyte by delivering electrolyte with an electrolyte-delivering machine having a pressurization means, and (e) cutting the electrode collector between the electrode mixture layer which is intermittently formed. The closest prior arts of record, Miyazaki and Kaido et al., do not teach or suggest the formation of the electrolyte layer by using an electrolyte-delivering machine having a pressurization means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dah-Wei D. Yuan whose telephone number is (571) 272-1295. The examiner can normally be reached on Monday-Friday (8:00-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan, can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dah-Wei D. Yuan  
April 20, 2004

A handwritten signature in black ink, appearing to read "Dave" followed by a stylized flourish.